

Homework 13 - Revision

No Calculator

1. Work out

a. $2\frac{1}{3} + 1\frac{2}{5}$

b. $6\frac{3}{7} - 3\frac{5}{9}$

c. $2\frac{4}{7} \times \frac{28}{45}$

d. $5\frac{1}{2} \div 3\frac{2}{3}$

2. Multiply out and simplify

a. $(h + 3)(7h - 4)$

b. $(g - 3)^2$

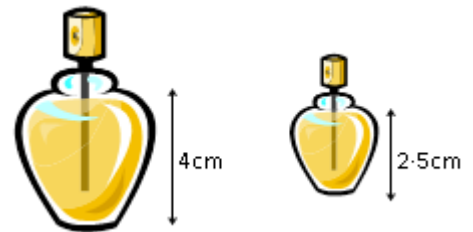
c. $(3t - 2)(2t^2 - 5t + 11)$

3. Solve for y, $7y + 4 = 4y - 5$

4. Mr. Martini is ordering tea and coffee for his cafe. He spends exactly £108 on these each month. In March he orders 4kg of tea and 6kg of coffee. In April he changes his order to 8kg of tea and 3 kg of coffee. How much do the tea and coffee cost each per kilogram?

Calculator allowed

5. These two perfume bottles are mathematically similar. The cost depends on the volume of perfume in them. The larger bottle costs £62. Find the cost of the smaller bottle correct to the nearest penny.

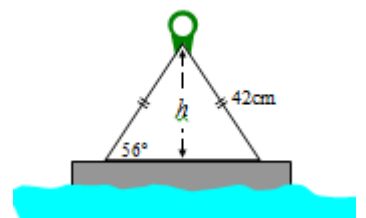


6. My new car has just cost me £18,000. Its value will depreciate by 20% every year. How much will it be worth when I trade it in 3 years from now?

7. Due to fire damage, the value of a painting has fallen by 34% and is now valued at £4158. What was its value before the damage?

8. Calculate the distance between A(-3, 5) and B(8, -1)

9. The diagram opposite represents a buoy used for tying-up small boats. Calculate the vertical height (h) of its triangular frame.



10. Sherbet in a sweet shop is stored in a cylindrical container like the one shown in *diagram 1*.

The volume of the cylinder, correct to the nearest 1000cm^3 , is $10\,000\text{cm}^3$.

The sherbet is sold in conical containers with diameter 5 cm as shown in *diagram 2*.

250 of these cones can be filled from the contents of the cylinder.

a. Calculate the volume of sherbet required to fill one cone.

b. Calculate the depth, d cm, of a sherbet cone.

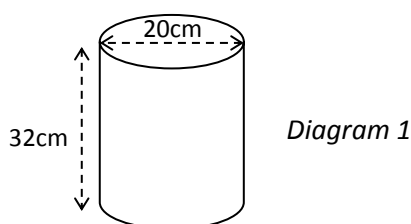


Diagram 1

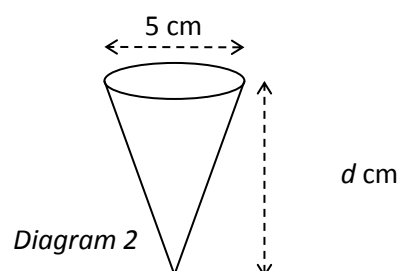


Diagram 2